An Empirical Study on Relationship between Dividend and Value of Firm in Indian Engineering Industry

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Abstract

The management is the representatives of the shareholders. In the process of running business, they have to keep in mind that the decisions they will take will impact the firm's shares. That's why share price is critical determinant of shareholders wealth. Every company is interested in maximizing the profits and shareholders wealth. This can be achieved by using combination of different factors. Dividend policy among other factors can be regarded as a cause of variations in firm value. The present paper attempts to explore the relationship between dividend and value of firm in Indian Engineering sector. For carrying out the study, a sample of 63 companies in Engineering sector listed on BSE with continuous dividend payments from 2004-08 has been analysed using Multiple Regression analysis. The results bring forth the fact that there exists the relationship between dividend and value of the firms.

Keywords: Dividend, Earnings Theory, Clientele Effect, Signaling Effect and Value of Firm.

1. Introduction

The role played by financial managers becomes all the more imperative in the increasing competitive scenario in which they are required to focus on the sole objective of wealth maximization which requires critical financial decisions. This is because the shareholders wealth maximization is the result of company's financial management policy and will result into maximising value of the company that is measured by the price of the company's common stock. Thus, the ultimate goal of corporate entities is to maximize the value of shareholders' investment in the firm. Managers pursue this goal through their investment and financing decisions. Apart from these decisions, managers need to decide whether to distribute the earning among shareholders as dividend because the work of top management is to maximize the wealth of the firm's shareholders. The management is the representatives of the shareholders. In the process of running business, they have to keep in mind that the decisions they will take will impact the firm's shares. That's why share price is critical determinant of shareholders wealth. Shareholders like cash dividends, but they also like the growth in EPS that result from ploughing back of earnings into the business (Khan and Jain, 1992). The optimal dividend policy is the one that maximizes the company's stock

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price which leads to maximization of shareholders' wealth and thereby ensures more rapid economic growth (Maheshwari, 1992).

Every company is interested in maximizing the profits. This can be achieved by using combination of different factors. There are many firms in the market and each of them has its own value, some of them become extremely expensive and some of them become bankrupt. What are the reasons which determine and can affect the firm's value? There are many approaches in this area but some of them are: managerial style, ownership structure, political stability, dividend payout. Dividend policy among other factors can be regarded as a cause of variations in firm value. Dividends serve as an indicator of the firm's present and future performance and potential risk level by lending credibility to management claims, and as such may help determine the market price of the stock. Stability in dividend policy is often necessary to eliminate uncertainty and the potential poor market valuation by investors associated with unpredictable dividend payments, and a decrease in dividends often results in a negative market response as seen by a reduction in the price of the stock. The level of the decline in stock price is, however, often dependent upon the reason behind the dividend cut, be it poor earnings or future growth potential (Shapiro, 1990).

2. Review of Literature

In an attempt to examine the relationship between dividend and value of firm, number of reasearchers has made significant contribution in the dividend literature. The contributions have been made on the basis of linkage of dividend with the attributes of firm's value. The entire discussion has been divided in five parts:

2.1 Basic Dividend Theories

The attempt in the past has been made to extract the relationship between dividend and share prices through the related models. One of the most commonly used models is the dividend model of share prices, based on earnings that the shareholder gains on his share (Koskela, 1984). That model is based on discounted earnings when the shareholder's rate of return is changing (William, 1938). It is presumed that private investors buy future dividends when they buy a share and then a share is worth only what an investor can get out of it. The market establishes share prices by discounting an anticipated stream of future dividends (Hickman and Petry, 1990). Some of the models based on the same concept are: Walter's (1956) model and Gordon's (1959, 1962, 1966) model.

Further, Solomon's (1963) model covered discounted dividends and earnings and, investments made by discounted retained earnings. The model is an extended version of Walter's and Gordon's models. Other dividend-based models are Lintner's (1962) propositions, Porterfield's (1967) conceptions, as well as the models of Malkiel and Cragg (1970) and Bower–Bower (1970). These models presume that the investor knows the stream of future dividends and so they suppose perfect knowledge.

Eades (1982) also is credited for developing a dividend signaling model. Hagen (1973) determined the market value of the stochastic process representing the company's dividend policy.

Goetzmann and Jorion (1995) re-examined the ability of dividend yields to predict long-horizon stock returns. The study was based on two series beginning in 1871 up to 1993, a monthly series for the United States, and an annual series for the United Kingdom. As a result, dividend yields only displayed marginal ability to predict stock market returns in either country.

Rees (1997) analysed a sample of 8,287 firms/years drawn from UK industrial and commercial sectors during the years 1987–1995. The evidence strongly suggested that earnings distributed as dividends have a bigger impact on value than do earnings retained within the firm.

2.2 Earnings Theories

According to the theory of financial economics, the value of the company can be regarded as the present value of its cash flows (Miller and Modiglani, 1961). Advocates of the same viewpoint are: Miller and Modigliani (1961), Friend and Puckett (1964), Watts (1973), Fama (1974), Black and Scholes (1974), Black (1976), Rubinstein (1976), Ross (1977), Miller and Scholes (1982) and Copeland and Weston (1988). The classic work of Miller and Modigliani's demonstrated that the firm's investment decisions and dividend decisions do not depend on one another. They found that a firm's taxes, growth and capital structure do not affect dividends. Thus dividend policy"does not matter" and hence, is irrelevant.

2.3 Clientele Effects and Ex-date Effects of Dividends

2.3.1 Clientele effects

Miller and Modigliani (1961) originally suggested clientele effects. They argued that investors choose the corporations on the basis of preference of corporate payout. Each payout ratio tends to attract a class of investors, a clientele. From the firm's point of view, any clientele is as good as any other. If the firm changes its payout ratio, the result would be a change in the clientele, but that will not affect the value of the firm because any clientele is, from the firm's perspective, as good as any other.

In clientele effects, the studies assume that some classes of investors may prefer different levels of dividend due to different levels of taxation Lease, Lewellen and Schlarbaum (1976) used panel data to analyse the demographic attributes and portfolio compositions of a wide variety of individual investors. According to the results, private investors preferred long-term capital gains, followed by dividend income and then short-term capital gains.

Opposite views were presented by Hess (1982) and Barclay (1987), whose empirical evidence did not support clientele effects on asset prices.

Booth and Johnson (1984) examined the ex-dividend day behaviour of Canadian stock prices, but the ex-dividend day price ratios do not provide much evidence in support of dividend tax clienteles.

2.3.2 Ex-date effects

Traditionally, it was believed that stock prices should fall by exactly the amount of the dividends (Kaplanis, 1986). Empirical evidence does not support that conclusion (Barclay, 1987).

Elton and Gruber (1970) presented their hypothesis to explain why on ex-dividend days stock prices could fall less or more than the amount of dividends. They showed that the price relative to dividends depends on marginal stockholder tax rates. By that observation, it was possible to draw conclusions on the market's relative valuation of taxable dividends and capital gains.

Litzenberger and Ramaswamy (1980) argued that the ex-date effect is best explained by differential taxation of dividends and capital gains and, like Elton and Gruber (1970), that the dividend effect is complicated by clientele effects.

Kalay (1982) showed that the marginal tax rates of stockholders cannot be inferred, in general, from the relative price drop and therefore, according to him, the documented ex-dividend day behaviour of stock prices is not necessarily evidence of a tax effect or clientele effect. However, the correlation between the ex-dividend relative price drop and the dividend yield was still positive, which is consistent with a tax effect and a tax induced clientele effect.

Miller and Scholes (1982) represented opposite views in the "short-term traders" hypothesis. They argued that, if the stock price drop on the ex-dividend day is different from the dividend amount, short-term traders who face no differential taxes on dividends versus capital gains could make arbitrage profits.

Booth–Johnson (1984) examined ex-dividend day behaviour of Canadian stock prices (when Canada first began to tax capital gains) and found that ex-dividend day price was significantly different from zero or one.

Kaplanis (1986) studied option price movements around ex-dividend, using UK Traded Options Market data from 1979 to 1984 and found that the average expected fall-off implicit in option prices is around 55 to 60% of the dividend and significantly different from it. Also the fall-off varied inversely with the dividend yield, which is consistent with the prediction of the "tax clientele hypothesis".

2.4 Signalling Effects and Dividend

The signalling effect of dividends assumes that dividends convey information about future earnings (Karanjia, 1990). Changes of dividends give messages to investors about the firm's future cash flows.

Miller and Modigliani (1961) hypothesized that dividend reductions convey information that future earnings prospects are poor. The basic hypothesis includes that dividends and future earnings are in relation to each other. The studies then examine fundamentally how dividends affect future earnings. Such studies are, for instance, Lintner's (1956) and Watts (1973) propositions. A number of studies have been made to examine the reaction of stock markets to dividend announcements. Empirical results have found the signalling effect of dividends especially on U.S. data (Watts, 1973, Aharony and Swary, 1980 and Dann, 1981).

Aharony and Swary (1980) researched those dividend announcements which were separated from earnings announcements at least by ten trading days. The study was based on 2610 sample dividend announcements preceded by earnings announcements. The study covered the time period from 1963-76. When dividends decreased, the average stock price decrease was –3.76% and, when they increased, the stock price increased +0.72%. Both results were statistically significant.

Vermaelen (1981) found that a stock repurchase followed a significantly higher stock price response than a corresponding equivalent dividend increase. Kane, Lee and Marcus (1984) examined whether investors evaluate earnings and dividends announcements in relation to each other. He found that the abnormal return corresponding to any earnings or dividend announcement depends on the value of the other announcement. Investors gave more credence to unanticipated dividend increases or decreases when earnings are also above or below expectations, and vice versa. Asquith and Mullins (1986) argued that dividends and stock repurchases play different roles in signalling information to shareholders. Ofer and Thakor (1987) hypothesised that firms will repurchase stock only when they are largely undervalued and will pay dividends to correct minor stock mispricing. In doing so, they will signal good future investment prospects to the stock markets.

As per Laux, Starks and Yoon (1998) same dividend announcement can have diverse effects within the same industry. Although managers signal information about the announcing firm, the dividend change can also disclose information relevant for the announcer's rivals. Their results suggested that for rivals without extensive market power or growth options relative to the announcer, dividend increases elicit a negative reaction. Conversely, rivals with relatively more market power and growth options experience positive reactions to dividend increases and no reaction to dividend decreases.

3. Need and Objective of The Study

After a deep insight into the literature, it was found that ample research is required in the field of existence of relationship between dividend and value of firm in Indian context. The present paper focused on the primary objective of exploring the existence of relationship between dividend and value of Indian companies in the Engineering sector.

4. Hypothesis of The Study

In order to empirically verify the above objectives the following null hypothesis was framed and tested:

Gordon (1962) and Lintner (1962) suggested that there is a positive correlation between a firm's dividend policy and the market value of this firm. This outcome was further supported by the studies conducted by Asquith and Mullins (1983), Srivastava (1984) and Anand (2004). Bhat and Pandey (1994) put forth that managers do consider the existence of positive relationship between dividend and value of firm. However, Miller and Modigliani (1961) claim, in a perfect world, the value of a firm is unaffected by the distribution of dividends and is determined by the earnings ability of the firm and the risk of holding assets. If the firm pays dividends, each share will be worth less because new shares must be issued to finance the cash outflow. Also, investors can obtain cash by selling their shares in

the market (Miller and Modigliani 1961; Brealey and Myers, 2000). Therefore, firms need not worry about their dividend policy (Brealey and Myers, 2000). The absence of relationship between dividend and value of firm was strengthened in the researches conducted by Harris and Kemsley (1999) and Uddin (2003). Survey evidence by Baker and Powell (1999) and Baker, Powell, and Veit (2001) showed that most of their respondents believe that dividend policy affects firm value.

H0: Theoretically, it is assumed that dividends serve as an indicator of the firm's present and future performance and potential risk level by lending credibility to management claims, and as such may help determine the market price of the stock. However, academic literature suggests that dividend payments should have no impact on shareholders value in the absence of taxes and market imperfections. Hence, companies should invest excess funds in the positive net present value projects instead of paying out them to the shareholders. Hence, it has been assumed that there exists no relationship between dividend policy and the value of firm.

5. Data Base and Methodology

5.1 Data Base

This paper focuses on exploring the relationship between dividend and value of the firm in India. For this purpose, the study was carried out on secondary data of 63 companies in Engineering industry, listed on Bombay Stock Exchange. The data has been collected from Prowess database. The companies have been selected on the basis of the following criteria:

i. The companies must be listed with Bombay Stock Exchange.
ii. The companies must have paid dividend from 2004-08.

In an attempt to study and test the existence of relationship between dividend and value of firm, five variables have been identified from the review of literature viz. Dividend payout, Dividend per share to par value, Dividend per share to book value, Market value to book value and Market value to par value. Out of these variables, three independent variables considered were Dividend payout, Dividend per share to par value, Dividend per share to book value and two dependent variables were Market value to book value and Market value to par value for the study period 2004-08.

5.2 Statistical Tools & Techniques

The present study had been analyzed using Multiple Regression Analysis. The variance inflation factor (VIF) was used to assess the multi-collinearity. Threshold values of tolerance above .10 (Hair et al., 1998) and VIF scores of less than 10 suggest minimal multi-collinearity and stability of the parameter estimates (Neter et al., 1985; Dielman, 1991). For carrying out the analysis, SPSS software has been meticulously used.

6. Analysis and Interpretations

The analysis has been carried out in two parts: first for the relationship between three explanatory variables with Market value to book value and the second part deals with the relationship of three explanatory variables with Market value to par value.

6.1 Relationship between Dividend Decision and Value of Firm with Market Value to Book Value as Dependent Variable

The variance inflation factor (VIF) scores, as shown in Table 1 ranged between 1.025 and 9.723.

Table 1: Collinearity Diagnostics for Engineering Industry with Market Value to Book Value as Dependent Variable

Model	*Year*	*Collinearity Statistics*	
		Tolerance	**VIF**
Dividend Payout	2004	.566	1.767
	2005	.966	1.035
	2006	.173	5.764
	2007	.253	3.960
	2008	.975	1.025
Dividend Per Share to Par Value	2004	.074	5.425
	2005	.261	3.826
	2006	.129	7.762
	2007	.148	6.778
	2008	.648	1.543
Dividend Per Share to Book Value	2004	.068	9.723
	2005	.257	3.884
	2006	.407	2.456
	2007	.325	3.075
	2008	.640	1.563
Dependent Variable: Market Value to Book Value			

In all the years under study, i.e. 2004-08, the significant relation was derived between the market value to book value and three explanatory variables viz. dividend payout ratio, dividend per share to par value and dividend per share to book value. The analysis of the regression coefficients in Table 2 signified the influence of explanatory variables D/P ratio (dividend payout), DPS to PVt (dividend per share to par value) and DPS to BVt (dividend per share to book value) on the dependent variable MV/BVt (market value to book value) in all the 5 years under study at 10% level of significance. It is thus concluded that in Indian Engineering industry, there exists the relationship between dividend and value of firm.

Table 2: Regression Result For Dividend and Value of Firm Market Value to Book Value As Dependent Variable

YEAR	**a**	**b1**	**b2**	**b3**	**R^2**	**$\overline{R^2}$**	**F**
		D/P	**DPS/PV**	**DPS/BV**			
		***	***	***			
2004	1.343	-.668	.805	-2.698	.339	.305	10.083
	(6.380)	(-1.592)	(2.260)	(-.494)			
		***	***	***			
2005	1.669	-.192	.243	7.090	.158	.115	3.690
	(5.988)	(-.820)	(.637)	(1.132)			

		***	***	***			
2006	2.793	-.313	-2.018	21.378	.122	.077	2.731
	(5.334)	(-.815)	(-.498)	(2.640)			
		***	***	***			
2007	2.079	-.267	.120	20.238	.181	.139	4.341
	(4.452)	(-1.941)	(.237)	(2.542)			
		***	***	***			
2008	1.587	-2.439	.460	18.073	.117	.072	2.596
	(2.691)	(.102)	(1.007)	(1.473)			

Note: Figures in the bracket show t-values of the coefficient
**Sig at 1% level*
***Sig at 5% level*
****Sig at 10% level*

Relationship between Dividend Decision and Value of Firm with Market Value to Par Value as Dependent Variable

The variance inflation factor (VIF) scores, as shown in Table 3 ranged between 1.025 and 7.762.

Table 3: Collinearity Diagnostics for Engineering Industry with Market Value to Par Value as Dependent Variable

Model	*Year*	*Collinearity Statistics*	
		Tolerance	**VIF**
Dividend Payout	2004	.566	1.767
	2005	.966	1.035
	2006	.173	5.764
	2007	.253	3.960
	2008	.975	1.025
Dividend Per Share to Par Value	2004	.074	1.425
	2005	.261	3.826
	2006	.129	7.762
	2007	.148	6.778
	2008	.648	1.543
Dividend Per Share to Book Value	2004	.068	1.723
	2005	.257	3.884
	2006	.407	2.456
	2007	.325	3.075
	2008	.640	1.563
Dependent Variable: Market Value to Par Value			

The analysis of the regression coefficients in Table 4 signified a minimal influence of explanatory variables D/P ratio (dividend payout), DPS to PVt (dividend per share to par value) and DPS to BVt (dividend per share to book value) on the dependent variable MV/BVt (market value to book value) in all the 5 years under study.

Table 4: Regression Result For Dividend And Value Of Firm Market Value to Par Value As Dependent Variable

YEAR	a	b1	b2	b3	R^2	$\overline{R^2}$	F
		D/P	DPS/PV	DPS/BV			
		***	*	*			
2004	20.105	-9.674	29.469	-294.091	.481	.455	18.234
	(6.461)	(-1.561)	(5.597)	(-3.647)			
			*	*			
2005	22.297	-1.136	30.709	-291.770	.440	.412	15.482
	(5.957)	(-.361)	(5.997)	(-3.469)			
2006	44.748	-10.878	76.195	73.309	.035	-.014	.705
	(4.020)	(-1.335)	(.884	(.426)			
		*	*	***			
2007	36.813	-11.695	53.346	-428.678	.324	.290	9.432
	(3.922)	(-4.226)	(5.221)	(-2.679)			
			*				
2008	42.462	.485	52.130	-592.623	.198	.158	4.870
	(2.359)	(.037)	(3.740)	(-1.582)			

Note: Figures in the bracket show t-values of the coefficient
**Sig at 1% level*
***Sig at 5% level*
****Sig at 10% level*

The values of D/Pt were significant at 10% in the year 2004 and at 1% level in the years 2007 and in other years, it was found to be insignificant. The values of DPS to PVt were significant at 1% level in the years 2004, 2007 and 2008 and were insignificant in the other years. The values of DPS to BVt were significant at 1% level in the year 2004, 2005 and at 5% level in the year 2007 and were insignificant in other years. Thus, explanatory variables have minimal relationship with the value in Indian Engineering industry with DPS/PVt being a major explanatory variable. It is thus concluded that in Indian Engineering industry, there exists the partial relationship between dividend and value of firm.

The perusal of above results of the regression coefficients indicates that values of R2 (coefficient of multiple determination), $\overline{R}2$ (adjusted coefficient of determination) and F value of the coefficients, all signified influence of explanatory variables D/P ratio (dividend payout), DPS to Pv_t (dividend per share to par value) and DPS to BV_t (dividend per share to book value) on the dependent variable MV/BV_t (market value to book value) in all the years under study. Thus, the results led to the rejection of the null hypothesis and it can be concluded that there exists a relationship between dividend and value of firms under study in Indian Engineering industry.

7. Conclusion

The present paper has covered the examination of the relationship between dividend and value of firm in Indian Engineering industry. In presence of different school of thoughts on relationship between both the variables and lack of research and agreement on past research findings, an attempt has been made to discover the relationship between both the variables in Indian industries for the time period under study. It has been discovered that there exists significant relationship between

dividend and value of firm from year 2004 to 2008 but the degree of relationship varies. In case of relationship of MV/BV and three explanatory variables, the significant relationship existed and in case of relationship of second dependent variable MV/PV with three explanatory variables, a partial relationship has been found in all the years for the engineering industry.

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